

D0297 NP

Fig. 1A

1 CACTCACACACCTACGGACACACGCTACTCTGGGAGGTGATTGCGACTTAGCCAGGCC 60
 61 CCAAAGCTGGGCTCCTGTAGGGAGAAAGTCTGCCCAGGTCCACATCCAAGCCTTCATCGT 120
 121 TTGTCCTCCGGGTTCTGGGATCCTGCTGGAAGAGGGGAGCTTCTGCAATGGGAGTTGCCA 180
 1 M G V A T 5
 181 CAACCCTGCAGCCCCCAACCACTTCCAAAACCTTGCAAGCAGCATCTAGAAGCAGTGG 240
 6 T L Q P P T T S K T L Q K Q H L E A V G 25
 241 GCGCCTACCAATATGTGCTCACTTTCCTCTTCATGGGCCCTTCTCTCCCTTCTTGCTCT 300
 26 A Y Q Y V L T F L F M G P F F S L L V F 45
 301 TTGTCCTCCTCTTCACGTCACTCTGGCCCTTCTCTGTTTTTACTTGGTGTGGCTCTATG 360
 46 V L L F T S L W P F S V F Y L V W L Y V 65
 361 TGGACTGGGACACACCCAACCAAGGTGGAAGGCGTTTCGGAGTGGATAAGGAACGGGGCAA 420
 66 D W D T P N Q G G R R S E W I R N R A I 85
 421 TTTGGAGACAACTAAGGGATTATTATCCTGTCAAGCTGGTGAAAACAGCAGAGCTGCCCC 480
 86 W R Q L R D Y Y P V K L V K T A E L P P 105
 481 CGGATCGGAACCTACGTGCTGGGCGCCACCCTCATGGGATCATGTGTACAGGCTTCCTCT 540
 106 D R N Y V L G A H P H G I M C T G F L C 125
 541 GTAATTTCTCCACCGAGAGCAATGGCTTCTCCAGCTCTTCCCGGGGCTCCGGCCCTGGT 600
 126 N F S T E S N G F S Q L F P G L R P W L 145
 601 TAGCCGTGCTGGCTGGCCTCTTCTACCTCCCGGTCTATCGCGACTACATCATGTCTTTG 660
 146 A V L A G L F Y L P V Y R D Y I M S F G 165
 661 GACTCTGTCCGGTGAGCCGCCAGAGCCTGGACTTCATCCTGTCCAGCCCCAGCTCGGGC 720
 166 L C P V S R Q S L D F I L S Q P Q L G Q 185
 721 AGGCCGTGGTCATCATGGTGGGGGGTGCGCACGAGGCCCTGTATTCAGTCCCCGGGGAGC 780
 186 A V V I M V G G A H E A L Y S V P G E H 205
 781 ACTGCCTTACGCTCCAGAAGCGCAAAGGCTTCGTGCGCCTGGCGCTGAGGCACGGGGCGT 840
 206 C L T L Q K R K G F V R L A L R H G A S 225
 841 CCCTGGTGCCCGTGTACTCCTTTGGGGAGAAATGACATCTTTAGACTTAAGGCTTTTGCCA 900
 226 L V P V Y S F G E N D I F R L K A F A T 245
 901 CAGGCTCCTGGCAGCATTTGGTGCCAGCTCACCTTCAAGAAGCTCATGGGCTTCTCTCCTT 960
 246 G S W Q H W C Q L T F K K L M G F S P C 265
 961 GCATCTTCTGGGGTCGCGGTCTCTTCTCAGCCACCTCCTGGGGCCTGCTGCCCTTTGCTG 1020
 266 I F W G R G L F S A T S W G L L P F A V 285

Fig. 1B

1021	TGCCCATCACCCTGTGGTGGGCGCGCCCATCCCCGTCCCCAGCGCCTCCACCCACCG	1080
286	P I T T V V G R P I P V P Q R L H P T E	305
1081	AGGAGGAAGTCAATCACTATCACGCCCTCTACATGACGGCCCTGGAGCAGCTCTTCGAGG	1140
306	E E V N H Y H A L Y M T A L E Q L F E E	325
1141	AGCACAAGGAAAGCTGTGGGGTCCCCGCTTCCACCTGCCTCACCTTCATCTAGGCCTGGC	1200
326	H K E S C G V P A S T C L T F I	341
1201	CGCGGCCTTTTCGCTGAGCCCTGAGCCCAAGGCACTGAGACCTCCACCCACTGTGGACTC	1260
1261	CATGCCTCCAATAAAAGGTAGTTCTGGGCCAGCGCAGTGCCTCGTGCCTGTGATCCCAG	1320
1321	CACTTTGGGAGGCCAGGGTGGGAGGATCGTTTGAGCCCAGGAGTTGAAGACCAGCCTGGG	1380
1381	CAACACAGTGAGACTTCATTCTACAAAAAAAAAAAAAAAAA	1420

**Fig.2: Alignment of Predicted Human
MGAT3 with its Homologues**

MGAT3	(1)	1	-----	50
MGAT1	(1)		-----	
DGAT2	(1)		MKTLIAAYSGVLRGERQAEADRSQRSHGGPALSREGSGRWGTGSSILSAL	
MGAT3	(4)	51	ATTLQPPTTSKTLQKQH LEAVGAYQYVLTFLFMGPFFSLLVFVLLFTSLW	100
MGAT1	(1)		-MKVEFAPLN-IQLARR LQTVAVLQWVLSFLTGPMSIGITVMLTIHN-YL	
DGAT2	(51)		QDLFSVTWLNRSKVEKQLQVISVLQWVLSFLVLGVACSAILMYFCTDCW	
MGAT3	(54)	101	PFSVIFYLVWLYVDWDTFNQGGRRSEWIRNRAIWRQLRDYYPVKLVKTAE L	150
MGAT1	(48)		FLYIPYEMWLYFDWHTPERGGRRSSWIKNWTWKHFKDYFPTHLIKTDQL	
DGAT2	(101)		LIAVLYFTWLVFDWNTPKKGGRRSQVVRNWAVWRYFRDYFPITQLVKTHNL	
MGAT3	(104)	151	PDNRNVVLGAHPHGIMCTGFLGNFSTESNGFSOLFPGLRPWLAVLAGLFY	200
MGAT1	(98)		DPSHNYIFGFHPHGIMAVGAFGNFSVNYSDEKDLFPGFTSYLHVLPWFWE	
DGAT2	(151)		LTTRNYIFGYHPHGIMGLGAFGNFSTEATEVSKKFPGIRPYLATLAGNFR	
MGAT3	(154)	201	LPVYRDYIMSFGLCPVSRQSLDFILSQPOLQOAVVIMVGGAEALYSVPG	250
MGAT1	(148)		CPVFREYVMSVGLVSVSKKSVSYMVSKEGCGNISVIVLGGAKESLDAHPG	
DGAT2	(201)		MPVLREYLMSGGICPVSRDTIDYLLSKNGSGNAIIIVVGGAEBSLSSMPG	
MGAT3	(204)	251	EHCLTLQKRKGFVRLALRHGASLVPVVSFGENDIERLKAFATGSWOHWCO	300
MGAT1	(198)		KFTLFIRQRKGFVKIALTHGASLVPVVSFGENELFKQTDNPEGSWIRTVO	
DGAT2	(251)		KNAVTLRN RKGFVKLALRHGADLVPVVSFGENEVYKOVIFEEGSWGRWVO	
MGAT3	(254)	301	LTFKKLMGFSPCIFWGRGLFSATSWGLLPFAVPITTVVGRPIVPQR LHP	350
MGAT1	(248)		NKLQKIMGFALPLFHARGVFOYN-FGLMTYRKATHTVVGRPIPVROT LNP	
DGAT2	(301)		KKFQKYIGFAPCIFHGRGLFSSTWGLVPYSKPITTVVGEPIITPKLEHP	
MGAT3	(304)	351	TEEEVNHVHALYMTALEQLFEEHKESC GVPASTCLTFI	388
MGAT1	(297)		TOEQTEELHOTYMEELRKLFEEHKGYGIPHEHETLV LK	
DGAT2	(351)		TQDDIDLVTMYMEALVKLFEDKHKT KFGLPETEVLEV N	

**Fig.3 Hydrophobicity Analysis of
MGAT3**

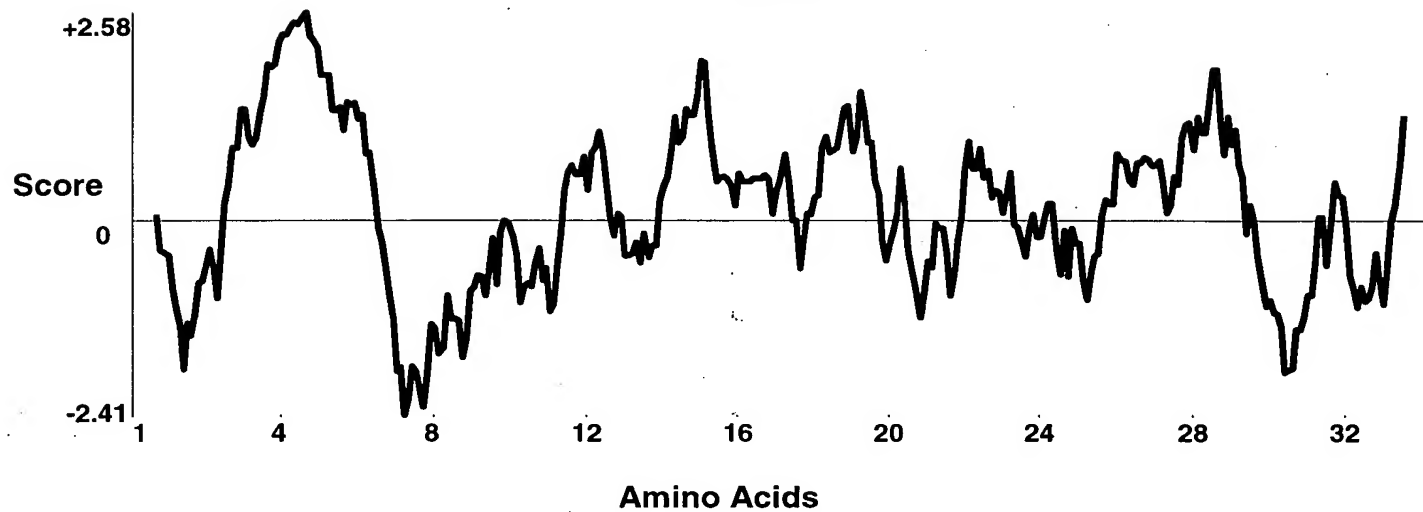
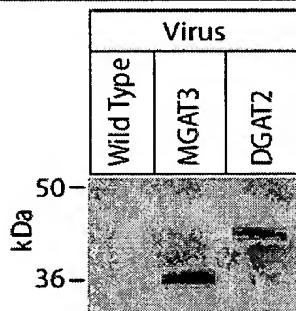
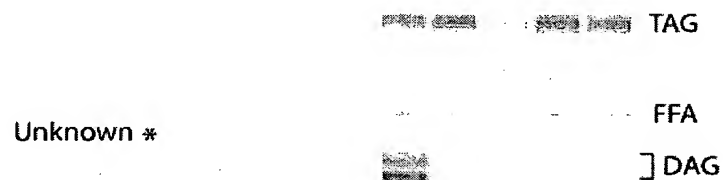


Fig. 4 Expression of Recombinant MGAT3**A. Immunoblot with Anti-FLAG IgG****B. TLC MGAT Enzyme Assay**

Exogenous Substrates	[¹⁴ C]Oleoyl-CoA		
	None	2-MAG	DAG



MAG **

Lanes	1	2	3	4	5	6	7	8	9
Virus	Wild Type	MGAT3	DGAT2	Wild Type	MGAT3	DGAT2	Wild Type	MGAT3	DGAT2

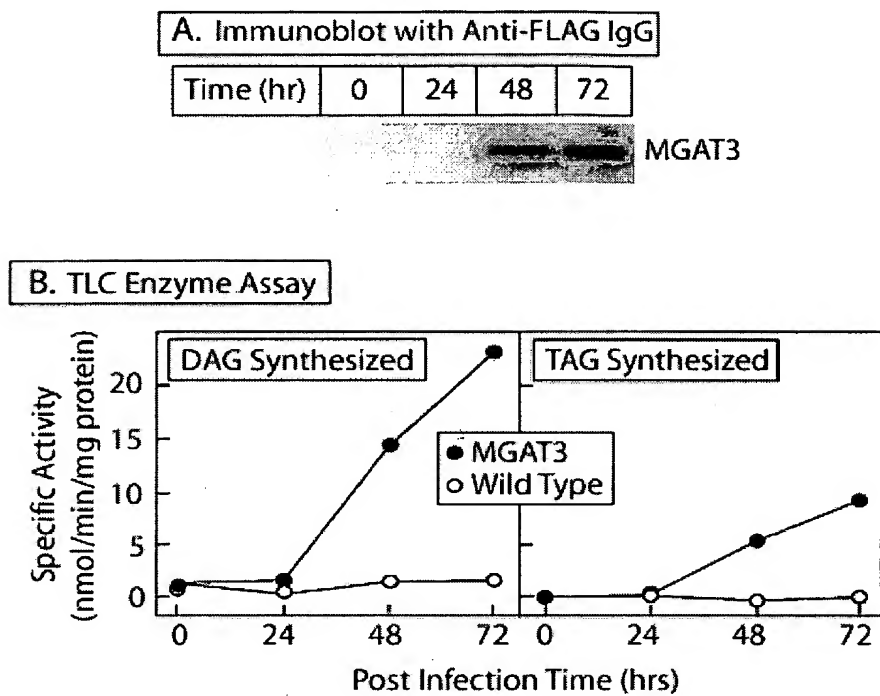
Fig.5 Time Course of Expression

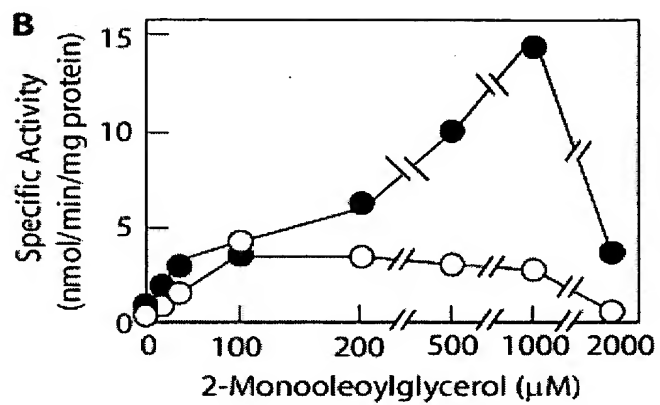
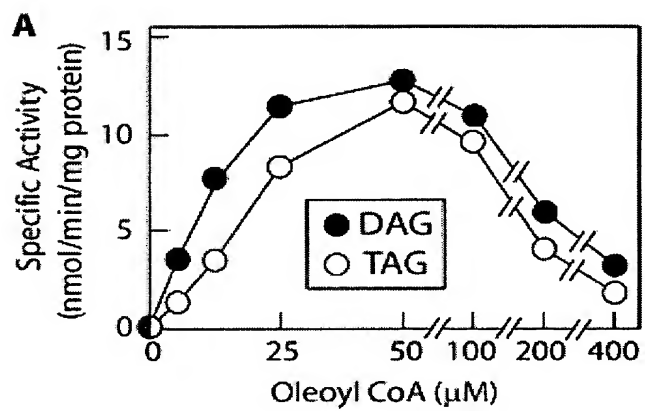
Fig.6 Substrate Concentration Curve

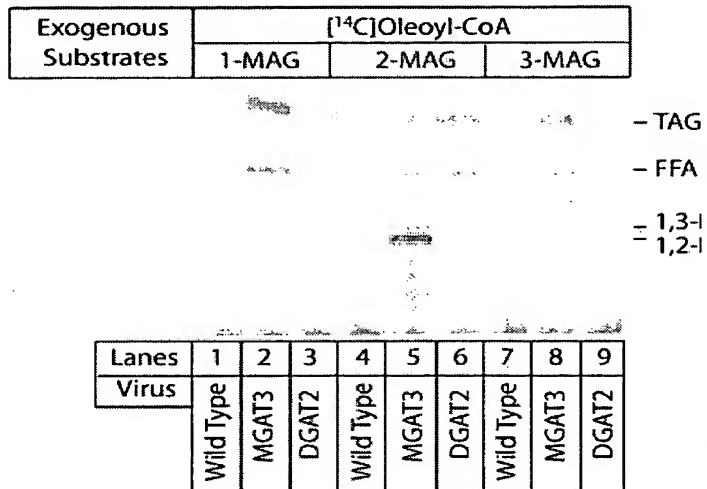
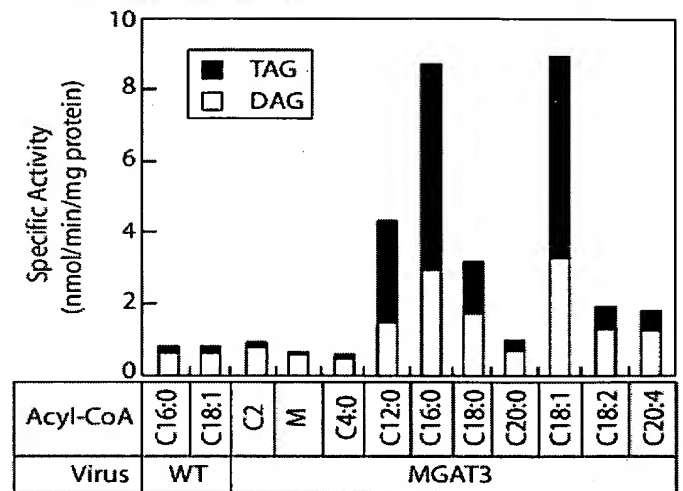
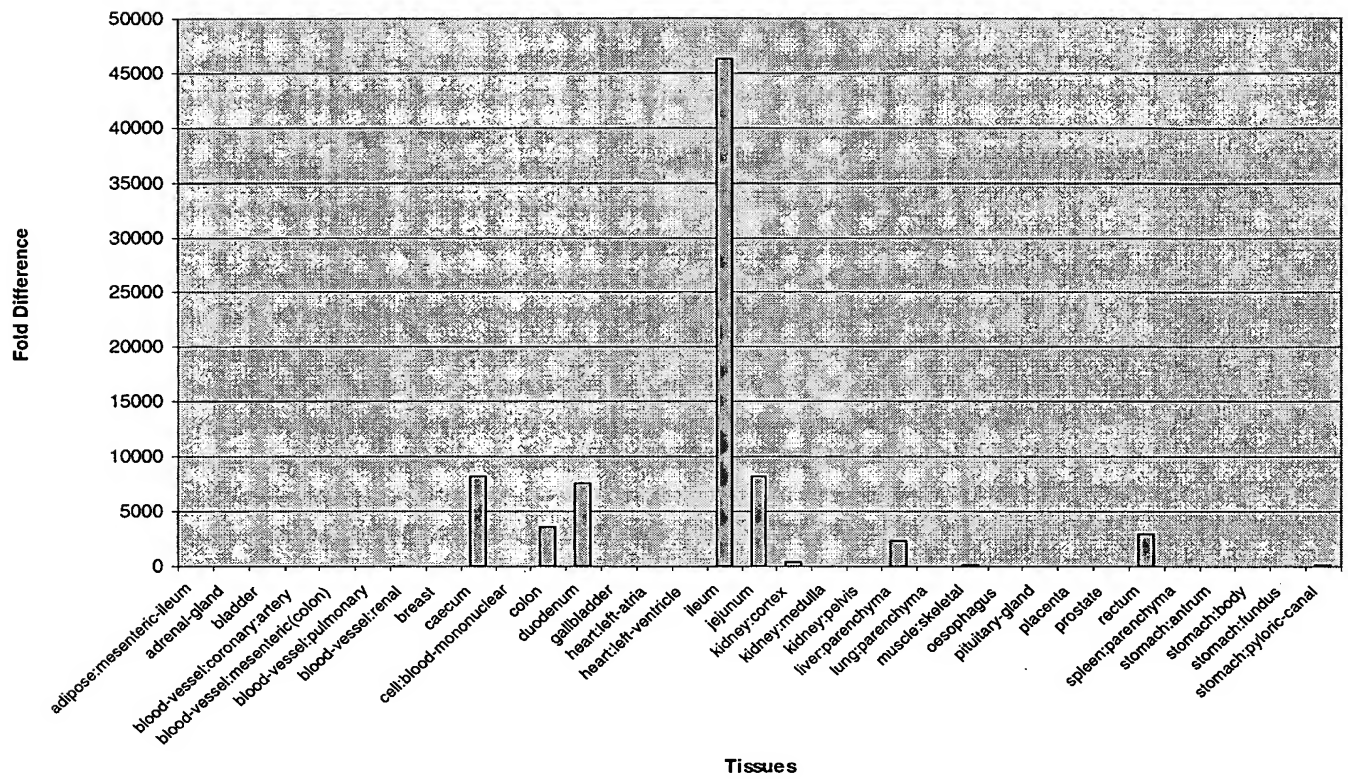
Fig.7 Substrate Specificity**A Monoacylglycerol Specificity****B Acyl CoA Specificity**

Fig.8 Relative Expression of MGAT3 in Normal Tissues



**Fig.9 Relative expression of MGAT3 in Crohn's
and control Ileum**

